Soil Sites

Goal

Contaminated soil sites will be treated to levels supportive of future use targets or regulator-specified levels for each geographic area as prescribed by CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) and RCRA (Resource Conservation and Recovery Act) decisions.

Fiscal Year 1998 Objectives

Key objectives for the year were to:

- continue remediation and excavation progress at sites in the 100 and 300 areas
- complete cleanup of North Slope site
- award construction contract and begin the Environmental Restoration Disposal Facility (ERDF) expansion
- maintain low operation costs at the ERDF
- meet Tri-Party Agreement milestones.

Hanford's plutonium production mission created massive amounts of waste and contaminants. Effluents and other byproducts of the production process were, in many cases, disposed of in unlined trenches and cribs. As a result of this practice and other disposal methods, soil contamination is present in many areas of the Hanford Site.

RL is working with site contractors to safely and effectively remediate contaminated soil sites and, where possible, prepare the sites for alternative uses.

In fiscal year 1998, significant progress was made in three areas: reducing risks to workers, the public, and the environment; increasing the amount of land and other resources recovered for other (private and governmental) uses; and reducing and eliminating the total amount of inventory and materials remaining to be cleaned up.

Reduced Risks: Soil and Waste Removal Continues

During the year, environmental risks to the Columbia River were reduced significantly. As part of remediation activities, 607,307 metric tons (669,441 tons) of waste were excavated from three sites along the Columbia River and delivered to the Environmental Restoration Disposal Facility (ERDF), a huge disposal complex for low-level and hazardous waste situated on Hanford's Central Plateau. On average, approximately 150 truckloads of waste were delivered to ERDF each day.

In a related accomplishment in January 1998, crews responsible for excavating contaminated soils and transporting waste materials to the ERDF logged one million hours without a lost time injury. The employees, who meet daily for safety planning sessions, have challenging and potentially dangerous jobs that include working near contaminated materials, operating heavy equipment, and driving large semi-truck and trailer rigs to deliver waste materials.

The year's excavation activities uncovered at least one surprise. In April 1998, workers cleaning up contaminated soil and materials in an old waste burial ground in the 300 Area near the Columbia River discovered 1,200 drums containing mineral oil and depleted uranium shavings, disposed of some 40 years ago. The shavings can ignite under certain conditions, though the presence of the oil helps prevent ignition. A stabilization plan quickly was initiated, and crews began the intensive process of inspecting the drums, placing some of the drums within drum overpacks, adding mineral oil, and respositioning the barrels in the burial ground for safe interim storage. Contractors are working with regulatory partners to develop a permanent solution for treatment and disposal.

The Environmental Restoration Disposal Facility opened in July 1996.

Land and Other Resources Recovered: North Slope Cleaned

On another front, crews successfully finished cleanup of the North Slope site, an achievement that resulted in the removal of the 370 square-kilometer (143 square-mile) tract from the Environmental Protection Agency's National Priorities List. The project involved removal of asbestos-containing materials and cleanup of chemical contamination. The completion of the North Slope project—along with cleanup of the 1100 Area in 1996—means nearly 50 percent of the Hanford Site has been cleaned and is available for other purposes.

A bulldozer pushes soil into the 316-S process trench as part of the backfilled regrading for final restoration. Cultural resources representatives maintain a watch for culturally sensitive items.

Reduction of Inventory and Materials: ERDF Receives Millionth Ton

A significant accomplishment was achieved in July 1998 when the one-millionth ton of contaminated waste was removed from a site near the Columbia River and disposed of in the ERDF, which opened in July 1996. In fiscal year 1998 alone, 607,307 metric tons (669,441 tons) of waste were delivered to the facility, which reports some of the lowest life-cycle operating costs—$45 per ton—in the DOE complex.

Expansion of ERDF is under way. Two disposal cells, measuring 152 meters (500 feet) wide, 305 meters (1,000 feet) long, and 21 meters (70 feet) deep, will be added to the existing two cells, which are nearing capacity. Design work for the expansion project was completed in February 1998, and initial site preparation was completed several months later. In September 1998, a Port Angeles, Washington, firm began work on the $6.9 million construction phase. When complete in December 1999, each cell will contain multi-layer liner and leachate collection systems. ERDF is expected to eventually expand to eight cells—two at a time—to accommodate future disposal needs.

During the year, the ERDF accepted its one-millionth ton of waste. To accommodate future waste, work began on the expansion of the facility to include two new disposal cells.

Accomplishments

- 607,307 metric tons (669,441 tons) of waste were removed from the 100 B/C, 100 D/DR, and 300 Area remediation sites and miscellaneous other sources, and delivered to the ERDF for disposal; base excavation was completed at eight 100 Area sites.
- The North Slope site was cleaned.
- The ERDF expansion contract was awarded; construction of disposal cells 3 and 4 was initiated.
- The ERDF's life-cycle operating costs of approximately $45 per ton were among the lowest in the DOE complex.
- In July, the ERDF accepted the one-millionth ton of waste since it began operations two years ago.
- Tri-Party Agreement milestones were met on or ahead of schedule.

Near-Term Challenge

A permanent solution for treatment and disposal of 1,200 barrels containing depleted uranium shavings must be developed in concert with regulatory partners. The barrels temporarily are being stored in a burial ground pending final disposition.